

Inside Wallops

National Aeronautics and Space Administration
Goddard Space Flight Center
Wallops Flight Facility, Wallops Island, Va.



Volume XX-08

Number 23

June 30, 2008

NASA Aircraft Examine Impact of Forest Fires on Arctic Climate

As the summer fire season heats up, NASA aircraft are following the trail of smoke plumes from some of Earth's northernmost forest fires, examining their contribution to arctic pollution and implications for climate change.

NASA's DC-8 and P-3B aircraft, based at a Canadian military base in Cold Lake, Alberta, are finishing their final three-week deployment of the Arctic Research of the Composition of the Troposphere from Aircraft and Satellites (ARCTAS) mission. A third NASA aircraft, the B-200 King Air, is flying from Yellowknife, Canada.

The P-3B aircraft is based at NASA Wallops Flight Facility and carries a crew from Wallops.

The resulting data, when combined with simultaneous satellite measurements, could reveal the impact of forest fires on the arctic atmosphere.

"The summer campaign focuses on boreal forest fire emissions," said Jim Crawford, manager of the Tropospheric Chemistry Program at NASA Headquarters. "Coupled with the observations of arctic haze during the spring deployment based in Alaska, these data will improve our understanding of the relative importance of these two influences on arctic atmospheric composition and climate."

Boreal forests, which span Earth's northern latitudes, have seen a rise in natural forest fires during the last decade.

Researchers have debated the degree to which these fires contribute to the Arctic's atmosphere compared to other sources, such as human-caused emissions from lower latitudes.

The ARCTAS flights through smoke plumes, over and downwind from their source, will reveal their composition and transport path.

Researchers also will use the data to examine how the chemistry of smoke plumes changes over time and distance.

Plume chemistry can contribute to the formation of ozone in the lower atmosphere. Particulates in smoke plumes can affect Earth's radiation balance with consequences for climate change.

The mission also is expected to help researchers interpret data from NASA satellites orbiting over the Arctic. NASA's Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observation, or CALIPSO, satellite can measure the height of various plume components in the atmosphere, information critical to predicting plume movement.



Researchers will use data from ARCTAS to validate observations from CALIPSO and other satellites to improve model predictions of fire impacts on chemistry and climate.

The Yellowknife site also hosts a portable science station from Pennsylvania State University that collects ground-based ozone and aerosol measurements, in conjunction with daily launches of balloon-borne instruments planned by Environment Canada and the National Oceanic and Atmospheric Administration.

The ARCTAS flights are being coordinated with research flights being conducted by the French space agency Centre National d'Etudes Spatiales, and the German Aerospace Center from Kangerlussuaq, Greenland.

For more information about the ARCTAS mission on the Web, visit:
<http://www.nasa.gov/arctas>



Mission Photo

George Postell, P-3 pilot, arriving in Fairbanks, Alaska.

The mission is the most extensive field campaign ever to study the chemistry of the Arctic's lower atmosphere. The three airborne laboratories are equipped to fly through the smoke plumes of northern-latitude forest fires.



NASA Wallops Hosts Summer Interns

This summer, NASA Wallops Flight Facility is hosting 48 summer interns from across the country. They are taking part in several different programs.

The programs and/or sponsors include the NASA Undergraduate Student Research Program; Virginia Space Grant Consortium; Marine Science Consortium; NASA System Software Engineering Branch Co-op; National Space Club Scholars; INSPIRE Project; NASA Sounding Rocket Operations Contract (NSROC); and Step-Up.

The students and the college, university or high school they attend are:

Salisbury University

Catherine Walsh
Barry Ward

James Madison University

Evan Jacobs
Adam Abdel-Rahman

Missouri University

Hannah Longworth-Mills

Virginia Tech University

Chris Smith
Mike Tolbert
Brian Smith
Mark Peretech
Philip Cathell
Maxim King
Beth Timmons

Wor-Wic Community College

Beverly Beauchamp
Kevin Armstrong

Syracuse University

Lynaya Morris

Shippensburg University

James Heiss

University of Maryland, College Park

Divyang Mago

University of Maryland, Eastern Shore

Jordan Henderson

Chincoteague High School

Matthew Clark

Parkside High School

Krystal Arroyo-Flores

James M. Bennett High School

Molly Cinderella
Pearle Lipinski

Stephen Decatur High School

Peter Andes
Michael Hershey
Matthew Smarte

Arcadia High School

Tiffany Young

University of Texas, Dallas

Scott Nietfeld

Hollins University

Kate Fleming

University of Virginia

Ernie Bowden

Eastern Shore Community College

Chris Miller

Old Dominion University

Chris Perry

Penn State University

Nate Empson
Alex Pini
Alex Malone
Chris Schultz

Homeschooled

Christian Schwarz

Holly Grove Christian

Jordan Lusby

Pocomoke High School

Chris Vieira
Zach Hall
Dylan Stevens
Andrew Timmons
Lubin Pichard

Snow Hill High School

Kevin Ayres
Jasmine Blake
Michael DiPaolo
Jacob Figgs
Greg Geesman
Ian Twilley



The bravest
sight in all this
world is a man
fighting
against odds.....

Franklin Lane

Just off the Pad



A NASA Black Brant XI sounding rocket was successfully launched (above) from Wallops Island on June 26. The 1,118 pound, Next Generation Sensor Producibility, payload was to enable new sensor technology and improve mission assurance of sensor flight experiments. Dr. Steven LeClair, Missile Defense Agency, was the experimenter. Doug Voss, NASA Range and Mission Management Office, was the project manager. Rick Weaver, NASA Sounding Rocket Operations Contract, was the mission manager.

A NASA Improved Orion sounding rocket was successfully launched from Wallops Island on June 27. The 290 pound payload was a pilot mission for the RockOn Space Flight Workshop concept. The payload was recovered. Libby West, NASA Range and Mission Management Office, was the project manager. Rick Weaver, NASA Sounding Rocket Operations Contract, was the mission manager.



Dr. John Campbell
My sincere appreciation to Barton Bull and Scott Schaire for outstanding support to the Operationally Responsive Space (ORS) Office in evaluating contractor proposals for the ORS Broad Agency Announcements.

Their drive and determination ensured a high degree of team productivity and success during a short but intense evaluation process.

Barton and Scott's dedication to this effort reflects greatly upon your organization.

Peter M. Wegner, PhD

Inside Wallops is an official publication of Goddard Space Flight Center and is published by the Public Affairs Office, x1584, in the interest of Wallops employees. Recent and past issues of *Inside Wallops* also may be found at: <http://www.nasa.gov/centers/wallops/news/newsletters.html>

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